

# AMERICAN VETERINARY REVIEW,

DECEMBER, 1888.

## EDITORIAL.

**LARYNGEAL SURGERY.**—It excites much interest in veterinary circles—criticisms severe and uncalled for—Gunther's mode of operation—Stockfelt's—Professor Möeller's—it is not as new as first supposed—it is not a new field, properly speaking—discovered by the Germans—it is worked to-day by English veterinarians—our experiments—and our failures to relieve—complications that we have observed—let every one report the results they may obtain—both successful or unsuccessful. **A NATIONAL PATHO-BIOLOGICAL LABORATORY.**—Dr. F. S. Billings' new bill—its provisions—is it not a new plan to obtain the National Veterinary School?—if it is, the idea is good—if it is not, our regrets, but our wishes for success all the same. **FIFTH INTERNATIONAL VETERINARY CONGRESS.**—The event coming close to hand—shall American veterinary science be represented?—or will our State and National societies lose their opportunities?—work which is to be done—names of those who compose the various committees. **ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.**—The sixth annual meeting—numerous papers of interest—good work done—good example to follow. **SURDITY IN HORSES.**—A case of sudden deafness. **THE SUBSCRIPTION PRICE OF THE REVIEW.**—It is worth the price—or it is not—no more club rates—no reductions except in the future.

**LARYNGEAL SURGERY.**—The subject of laryngeal surgery for the relief of roaring has recently excited much interest in veterinary circles, and the English veterinary press, especially, has been filled with remarks bearing variously upon different aspects of the question. Some of the writers are quite severe and personal in their attacks, both upon the operation and the gentlemen who have of late brought it so prominently into notice. That interference with the knife, in cases of roaring, is not a new thing in the domain of veterinary surgery, is a fact well known to all

veterinarians. The operation, as performed by Gunther as long ago as 1853, is described by Stockfelt as follows:\* "The horse turned on his back, has his head and neck well stretched; an incision is made on the median line, dividing the cricoid cartilage and *several rings of the trachea*; the wound kept open by blunt hooks; the left cartilage was seized with a tenaculum, drawn down and a piece three-fourths of an inch in length and one inch in width cut out." It appears by this description that the entrance to the larynx is effected in a manner very different from that which Prof. Smith recommends and practices in his various modes of operating. Stockfelt recommends, later, the operation of arytenodectomy, the larynx having been entered somewhat in the same manner as by Gunther, and the incision of the median line involving the same structures as Dr. Fleming's methods, but *also, several rings of the trachea*.† Professor Möller agrees with Gunther, not only that the dyspnea is not caused by the transverse position of the vocal cord, but by the sinking of the arytenoid cartilage, and he is also of the opinion that, instead of removing this cartilage, it should be spared, and he therefore recommends one or the other of his own methods of operation.‡ In the first it is his design to produce ankylosis of the articulation between the cricoid and the arytenoid cartilages, on the paralyzed side; and in the second, a severer mode, he aims to reduce the development of cicatricial structure in the atrophied crico-arytenoid muscle.

This brief review of laryngeal surgery shows, evidently, that for over thirty-five years the entrance into the larynx was already known, and had even been followed by some satisfactory results. The fact that nothing more has been accomplished in the same direction until recently may be accounted for by referring it to a disinclination on the part of veterinary practitioners to venture upon further experimentation, in consequence of their appreciation of the differences which exist in the various pathological changes in which the roaring originates, together with the practi-

\* Dan, VI., page 27.

† Chir. II.

‡ Centralblatt, 1886.

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cal difficulties in the way of positive diagnosis of the lesion itself.

This, however, does not justify the opposition which has been made to the operation described by Prof. Smith, nor does it excuse the sarcasms which have been levelled at the results, either reported or unreported, which have appeared. It is a new field or, rather, it is one which Gunther, Stockfelt and other German surgeons have discovered, in which English veterinarians are now working, and as with many other methods of surgical treatment, when first practiced, perfect results may not yet have become apparent. There is certainly one feature with which it may undeniably be credited. This is its simplicity and the comparative absence of danger attending the process, and of complications which may follow it. That these, however, cannot always be overlooked becomes evident from one of the reports published in the present number of the *REVIEW*, of a case upon which we experimented. It was our first case of this description. Of course it cannot be expected that every operation will succeed, and if we may found a judgment upon two other cases upon which we operated, and which are here reported by Dr. Tritschler, paralysis of the vocal cord was not the only cause of roaring. This fact, we believe, will in many cases cause the difficulty and constitute the objection to the operation. The three cases which are recorded in the present number of the *REVIEW* are not sufficient to condemn the operation, but they must be allowed their proper weight in deciding upon the future success and usefulness of a treatment, the adoption of which, after all, may prove to be of great advantage to all parties interested.

A NATIONAL PATHO-BIOLOGICAL LABORATORY.—Dr. F. S. Billings has favored us with a copy of a bill, of which he designs to procure the introduction before Congress at the coming session, and of which we will publish the entire text. It provides for an appropriation for the foundation of a National laboratory for the investigation of the nature of all contagious diseases, both of men and of animals, and in an accompanying circular, the learned director of the pathological laboratory of the State University of Nebraska makes the following synoptical suggestions:

1st. The bill arranges the work into the two distinct divisions of human and animal diseases, and thus at once creates a point of noble rivalry between them.

2d. It places it in charge of the Surgeon General of the Marine Hospital Service, thus supplying him with the means of acquiring a body of competent workers, with whom he may become acquainted beforehand.

3d. It gives him the world to choose from for directors of the two institutes, while it limits the selection of assistants to this country, thus providing the way for Americans of ability to rise to chief positions.

4th. It gives a chemist to each institute, thus keeping up the stimulating rivalry.

5th. It opens the way to independent workers, and thus increases the number, while the country has the benefit of the results.

6th. It opens the way for students, thus providing the means for Boards of Health and Medical Schools to obtain competent men, and stimulating research in all parts of the country.

7th. It tends to make our National capital a center of learning and culture, which should be the ambition of every citizen.

To many this plan will be a new idea, but in our view it is merely the suggestion of a new method of accomplishing the realization of a project of grand dimensions and vast import, for many years entertained by Dr. Billings, and consisting of nothing less than the foundation of a *National Veterinary School*. And why not? Such an institution has long been the ideal of Dr. Billings, and he does well to nourish it and seek its practical fulfillment. We feel sure that this new step is the right step in the right direction, and we hope it may lead to a splendid success. The bill provides for a large appropriation, an amount which, indeed, would give more funds than would be necessary for the purposes of a mere laboratory, and it provides also for such elements as would be strictly adapted to the use of a veterinary college. The details of the bill may be considered by some as including provisions of a superfluous character, and of course these, with all the rest, should be carefully considered.

Whatever may be the true object of Dr. Billings—even if it shall prove that we are mistaken in our suggestion touching a National school of veterinary education—we hope that it will meet with every merited success, and that it may not fail to receive a worthy share of consideration at the hands of our National legislators.

**FIFTH INTERNATIONAL VETERINARY CONGRESS.**—Only a few months now intervene before the occurrence of this important meeting, and if we may judge from the successes which have been



achieved on former similar occasions, the coming event must prove to be one of great interest to veterinarians. We have already called the attention of American members of the profession to this meeting and we take this opportunity to renew our reminder. The days are gone by when veterinarians on this side of the Atlantic were obliged to remain ignorant of such gatherings, and now, with our well-filled ranks of practitioners, the various flourishing schools in different sections of the country, and the numerous veterinary societies of National and State organization in more or less active operation, our veterinary community finds itself resting under an obligation not easily evaded, of having a good representation present at the time and place appointed. We hope, therefore, to be able at an early date to record the names of the delegates who are to be deputed to personate the veterinary organization of America among their European brethren. Arrangements for the meeting are already completed, the various committees of administration have been appointed and the following list of questions for discussion has been circulated. The subjects are interesting and important.

1st. Tuberculosis, considered from the special points of view of sanitary police and alimentary hygiene.

2d. International sanitary system. Its utility and organization.

3d. Compensation in cases of slaughter; what are the means adopted for insuring its payment; a fund for epizootics; assurance.

4th. Inspection of meats.

5th. Prophylactic measures against contagious pleuro-pneumonia in cattle.

*By resolution:* 1st. Each question shall be first studied by three reporters of different nationalities. 2d. Each of these reporters shall make an independent statement of his views as to the solution of the question submitted to him. 3d. The second question, respecting the organization of the international sanitary service, shall be submitted to the consideration of five reporters.

The following gentlemen have been appointed reporters:

1st question. Messrs. Arloing, of Lyons; Lydtin, of Carlsruhe; Perronato, of Turin.

*2d question.* Messrs. Leblanc, of Paris; Neiman, of St. Petersburg; Remartinez, of Madrid; Roll, of Vienna; Thomassen, of Utrecht.

*3d question.* Messrs. Cope, of London; Delamotte, of Vincennes; Potterat, of Berne.

*4th question.* Messrs. Baillet, of Bordeaux; Müller, of Berlin; Van Hersten, of Brussels.

*5th question.* Messrs. Butel, of Meaux; Degive, of Brussels; Robinson, of Greenock.

ILLINOIS STATE VETERINARY MEDICAL ASSOCIATION.—The sixth annual meeting of this Association was held on the 16th and 17th of November at Chicago, the order of business having been so arranged as to occupy two days in the discussion and disposition of the subjects selected for consideration. Judging from the indications presented by the programme, with which through the kindness of the President and Secretary we have been furnished, the meeting must have been one of great interest to those who were so fortunate as to be present. The papers presented on the first day were: "An unusual sequel of tracheotomy"; "Erysipelas in horses and a peculiar suppurative affection of the external lymphatics of cattle." The second day was occupied with papers on the "Uses of veratrum viride in veterinary practice"; "Parenchymatous degeneration of the kidney"; "Physiology of the spinal cord"; "Equine syphilis," by Dr. W. L. Williams. "Equine syphilis, with its importance to horse breeders, and the means of control," by Dr. Casewell; and a report of the autopsy on a mare affected with syphilis.

This Association means good work and, so far as we are able to judge, it offers an example to other State Associations, which some of them would do well to emulate.

We earnestly tender to the Illinois State Veterinary Medical Association our best wishes for its prosperity, and hope that its annual and other meetings may always be attended with a degree of interest and profit in future at least equal to that with which that of the present year has been characterized.

SURDITY IN HORSES.—We received, some time since, an inquiry from one of our readers, which, although we were unable

to answer satisfactorily for him, yet relates to a subject of more or less interest to the profession generally. It referred to the fact that a bay horse, which for years had always readily obeyed the voice of his driver, became entirely deaf in consequence of the shooting of a rat in the stable, and from that day became perfectly oblivious to any word of command, whether in the stable or while at work. "What can I do for him?" asks our correspondent. Affections of the ear are not common in the larger animals, and causes of surdity are very difficult to make out. In reference to the present case, while we may somewhat incline to attribute the trouble to a sudden rupture of the membrane tympani, yet we are constrained to say that our diagnosis is very uncertain, and that our prognosis is serious. The case is interesting *per se*, and we would be glad to hear what has been the result of the treatment to which the patient had been submitted.

**THE SUBSCRIPTION PRICE OF THE REVIEW.**—If we had ever feared for the result of our "error" in reducing the subscription rate of the REVIEW as we did, and that our new departure was destined to prove to be a mistake, we should certainly by this time have discovered the fact. We are pleased, however, to be able to state that such is not the case; that we have received many letters approving the change, and that our list of friends has considerably increased. For some, the REVIEW at \$4.00 was cheap enough, and a reduction suggested the idea of the lowering of the value of our publication. But the majority saw that the step was wisely taken, and that mainly, the new subscription rate meant that the REVIEW was to be placed within everybody's reach. It was not without careful consideration that we decided on the reduction, and when we did so, it was because the REVIEW could afford it; because it was not a money-making undertaking, and because we thought a wider circulation would benefit the journal itself, contribute to the elevation of the profession, and be useful to practitioners. We have, however, recently received a letter asking for information in relation to our price for clubs, which seems to indicate that even at \$3.00, there are persons for whom the REVIEW is still too expensive. Our experience with club-forming and club-rates has been unsatisfactory, and on that

account we have decided to ignore the club system in publishing the REVIEW. We cannot help thinking that either the publication is good and is worth what we ask for it, or that it is so poor that any thing like the regular price is too much for it.

The REVIEW is the only strictly veterinary journal published in the United States, and we endeavor to the utmost limit of our ability to entitle it to the approval and support of our friends, and if its subscription price is ever to be reduced again, it will be for reasons similar to those by which we have been influenced in our recent change, and not for the sake of trying to secure a few more subscribers. We do not wish to be understood as saying that our subscription list is large enough, and that we do not care to see it increased. Far from it; we thank our present friends for their support, and we hope for that of many more in the future, to enable us to make the REVIEW still cheaper, and we feel more or less confident that our hope is destined, at no remote period, to be realized.

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## ORIGINAL ARTICLES.

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### THERAPEUTIC REVIEW OF MILK FEVER, OR PARTURIENT APOPLEXIA.

By JOHN FAUST, V.S.

(Written specially for the *American Veterinary Review*.)

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The following lamentable therapeutic induced me to write the appended article, hoping that my entirely different treatment may benefit some of the readers of the REVIEW, and that the result will be to the advantage of those who follow it. I will cite the following authors:

Mr. Cartwright, of Whitechurch, Shropshire, says in the Third Vol. of "*The Veterinarian*," page 451: "Although I have seen at least a hundred cases, chiefly in this town, during the last twenty-five years, yet I am almost ashamed to confess that I cannot recall to recollection that I have ever cured a single case; nor

have I ever heard of a case being cured by any of the quacks in the neighborhood."

Mr. Wardle, of East Sheen, says in the abstract of the Proceedings of the Veterinary Medical Association for 1841, page 155: "Unfortunately the majority of cases that have come under my notice have proved fatal."

Mr. Mayer, Jr., of New Castle-under-Lyne, says at page 160 of the same volume: "It is very fatal and, in some districts, considered so incurable that the animal when taken is generally destroyed."

Mr. Simonds, Professor at the London Veterinary College, says in the same volume, page 160: "It seemed to be the very acme of all the ills with which the lower animals are affected; bidding defiance to all varieties of treatment adopted, and terminating almost always in death."

Woodroffe Hill, in "Bovine Medicine and Surgery," says: "In the earliest part, bleeding; next, epsom salts, aloes, jalap, cream of tartar, nitrate of potash and camphor, all in mass; or croton oil and linseed oil; large and repeated doses of alcohol."

Keeping the head cool is also an important matter.

In tympanitis, use trochar.

When delirious use hypodermic injections of morphine and Fleming's tincture of aconite in fifteen-minim doses.

The same author mentions an instance of a member of the profession being called to attend a cow in the very early stage of the malady, before she got down, and he at once exclaimed: "Oh, it is a case of milk fever; she will die." And die she did, for very little he troubled further about her. And it is doubtless through nonsense that the disease is so regarded.

Fleming, in "Veterinary Obstetrics," says: "The different modes of treatment enumerated for the cure of this disease are completely bewildering; and they are so diametrically opposed to each other—from the obscurity which prevails as to the nature of the malady, we suppose—that we can scarcely be astonished to find that they are all more or less unsuccessful."

"Frank, in "Handbuch der Theirarztsichen Geburtshuelfe," recommends sulphuric ether, camphor and asafoetida in the first



stages, and croton oil, strychnine, tartar emetic in large doses in later stages. *Digitalis*, *secale cornutum* and the different salts, aloes, oil of turpentine, *arnica* flowers, *nux vomica*, *cinchona*, *bryonia alba*, powdered *ipecac* and many others.

Prognosis unfavorable.

Zipperlen, in his work, recommends *camomilla* infusions, application of cold bran bags over the loins every ten minutes, *sabina* and similar remedies recommended by former mentioned authors.

Friedberger and Frochner, in "Pathology and Therapeutics," recommend *physostigma*, warm and cold applications, shower baths on ear, ironing spine over a woolen cloth with hot flat-irons, electricity, chloral hydrate, inhalations of chloroform and many others.

Our periodicals have given us nothing more definite than our previous literature, although the idea was entertained that *eserine* and *pilocarpin* were the hope of some of the profession, but we have received very unfavorable results.

The following is the method adopted by me for twenty years, with better results than any of the before-mentioned authors.

First, keep animal in natural position with straw props; next remove urine by catheter. Then give tincture of *aconitum napellum* and tincture of *belladonna*, alternately, every fifteen minutes—thirty-drop doses.

The first indication of recovery is returning consciousness, the next a very hard black *fœces* and a small quantity of coagulated *mucns*.

As soon as improvement manifests itself, reduce the dose to one-half, and give dose every hour. If paralysis remains give tincture *nux vomica* every two hours—thirty-drop doses.

I have every reason to believe that if the *aconite* and *belladonna* were given in the early stages of the malady, we would have scarcely any deaths to report.

The tinctures used by me are pressed out of the fresh plant. I have used the fluid extracts and other tinctures with no uniform success.

## RATTLEWEED OR LOCO-DISEASE.

BY DR. J. P. KLENCH, V.S.

I have lately noticed in the *AMERICAN VETERINARY REVIEW* of New York, a few notices that I consider to be of great interest to veterinary science, because they describe the effect of the rattleweed plant on horses and cattle in the large pastures of Nebraska, Kansas, Texas and the Territories, and call it Rattleweed, or Loco-disease or Crotalism, a disease that has not been described as such by any veterinarian authority in Europe or on this Continent.

I had the good fortune of observing that disease near Modesto, where I could make daily visits to my patients; and I am glad to be able to communicate to the members of this Association my little experience about this singular disease.

In September, 1887, a farmer called on me and asked my advice for his rattleweeded horses. As I had never seen such patients before, I concluded to drive to this man's ranch, where I found several horses showing great excitement; they could not be approached, so a close examination was impossible. I prescribed one drachm of bromide of potassium for each one every evening in the feed and two weeks later the horses were all right and good to work. Upon this happy result, I thought I had a sure cure for rattleweed, and if that proved to be correct, I was a made man. But there is many a slip between the cup and the lip, and my hopes for wealth turned out to be very rattleweeded indeed. That was the first and last cure I ever effected. Nevertheless, I intended to follow up that disease and found a good opportunity at the next ranch, where all the mules and horses were affected. So I drove up to this man's place and offered to cure his animals for ten dollars apiece, no cure, no pay. "All right," said the man, "there is a mule that came near killing me this morning. I had to knock her down with a fence rail and tied that heavy chain, twenty feet long, on a fore-leg, to keep her from jumping at me." I kept at a fair distance from that mule, but there was a family horse, very quiet, that I accepted for studying upon.

*Symptoms.*—They vary greatly in intensity, according to the temper of the animals and the quantity of the plant taken. The eyes are staring, sunken, glassy, pupil dilated, but able to contract when exposed to sudden light; horse cannot calculate distance, nor dimensions, nor nature of objects. When seeing a small object such as a bar or a rope, lying in his way, he will leap over it as if it were four feet high; a barn near at hand seems to be far off, and one at distance, near-by. He will go headlong against a barn, a rock or any obstacle as if he were totally blind; he will let me get close to him, then suddenly run away and suddenly stop, stare and look like a mad horse. He cannot see the manger with feed, although knowing its usual place; membranes of eyes injected and infiltrated. He walks with difficulty, shows a feeble and uncertain gait; lifts the legs up like a blind horse, will not back under any circumstances, wants to go in the opposite direction to which I pull him; cannot turn him around; when the rope pulls on the neck very hard, he grunts; seems to like the rubbing of the temporo-auricular muscles, and throws the head excitedly sideways when I pinch the base of the ears or behind and over the occipital bone. Cannot hear, seems deaf. The horse eats and drinks, but slowly, and at times stops masticating while the mouth is full of feed and some hay hanging partially outside—what the French call smoking his pipe—in sleepy staggers or immobility; seems to have no taste, as I have seen this horse and mule eat grain lively for three or four nights while two ounces of pulv. barbad. aloes were mixed with it; they never knew the difference. They are generally very excitable; if a quick motion is made before the animal, such as throwing up the arms, chicken flying over the fence, slapping of doors, etc., they are greatly frightened, and tremble all over, especially in muscles of head, neck and fore-legs. Sometimes a horse, and more so a mule, is suddenly seized as with mania, in which he gets very excited and quite uncontrollable and even dangerous. I have seen the son of the house, standing three yards away from this old gentle family horse, stretch his hand towards the horse's face, and hardly did he notice the hand in that position but the horse lay his ears, stretched out his head and neck, opened his mouth and

made a sudden plunge towards the boy, who had to run for his life; one moment later he approached him from the side without danger. This would indicate a hallucination. When left alone the animals will stand quiet, stupid, with head down, half asleep, like comatous, and might be standing thus much of the time for a whole week, with head often resting against some object. The head might be drawn towards the breast or stretched out.

The appetite diminishes with the progress of the disease. Although tolerably good yet in the period of over excitement, still the animals will lose flesh gradually and become poorer as the disease advances, so that when the coma sets in, they will stop eating altogether, and become entirely emaciated and die at last from sheer exhaustion and cachexia.

The artery is very small, depressed, indicating a very poor flow of blood; pulse so feeble that it cannot be taken; pulsation of heart also very weak, cannot be counted with the hand, but on auscultation I was able to count thirty-eight pulsations; respiration five, vesicular murmur in lungs inaudible, pulse various, visible at distance.

*Causes.*—There is no doubt but that this disease is caused by the loco-plant or rattleweed. Prof. Sayre of the Kansas State University, Department of Pharmacy, gives a full description of the plant and says that the crazy-weed means only two plants, the *Astragalus Mollissimus* and *Oxytropis Lamberti*, both belonging to the natural order of Leguminosæ. They grow on high grounds or rather dry soil which is also gravelly and sandy; they can be found also in the valleys, especially on uncultivated land, alongside the public roads and railroads. Every few years they make their appearance again on cultivated lands, when they are cut with the crop, thrashed and mixed with grain and straw. That explains how this disease is absent for a few years and then again becomes very violent, as I have remarked it around Modesto and the whole San Joaquin Valley. But in large pastures that are never plowed up, and where the plants are growing year in, year out, the stock is liable to eat it in the summer when feed is short. They bloom about June and bear a bright colored flower, yellow or bluish purple color, one foot and a half to two feet

high, developing large pots, resembling the pea, but containing a number of black or yellow hard seeds. Prof. Sayre has made several chemical analyses of the dried plant, and the result gave him fat chlorophyl and soft resin. No traces of any alcooloid were detected.

In order to ascertain the effect of this plant upon the animals, Dr. Harding, Veterinary Surgeon in Dodge City, Kansas, made the following experiments with loco-plant. One experiment was made in the pasture with two horses, both having fed on loco. One of these horses found a good deal of rattleweed in his field, while the other one had none, because the plant had been carefully removed. The first horse died in the pasture; the second one recovered. For the second experiment he placed two horses similarly affected in the barn. One received dried loco feed, the other one was fed on clean hay. That one died; the last one recovered.

In the November edition of AMERICAN VETERINARY REVIEW, 1884, Prof. Stalker, of the Veterinary College at Ames, Iowa, published a very interesting article about this disease. He says that the symptoms in some cases bore such a resemblance to those produced by eating *Astragalus Mollissimus* or loco-plant of the Western plains, as to direct his investigations to that family of plants. But on careful examination of the meadows and pastures, he could not discover a single loco-plant. However, he succeeded in finding a closely related plant called, *Crotalaria Sagettalis*, or Rattlebox, also known as the wild pea. In order to test the effects of this plant, he prepared a strong infusion from about ten pounds of the plant and administered it by means of a stomach pump. In twenty minutes, stupor began to appear and all the symptoms were closely defined. At the end of six hours, the stupor disappeared and in another hour the horse began to eat. The following day, when he had apparently recovered from these effects, he was given half the quantity of the drug as on the previous day. Now the symptoms were developed much quicker and death arrived in one and one-half hour. The post mortem examination revealed the characters of the above described disease. He now resolved to make a second experi-

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ment upon another horse and procured a bushel of the pods of that plant, and gave daily an infusion obtained from about one quart of the pods. On the fifth day of the experiment the characteristic stupor came on and grew more marked until the thirteenth day, when the animal died. The post mortem examination gave again the regular result. Prof. Stalker, now State Veterinarian in Iowa, calls this disease crotalism, from the name of the plant, *Crotalaria Sagettalis*, which belonging closely to the same family and species of plants, will make no difference as to the real cause of the rattleweed disease, and this is proven to satisfaction by the above experiments.

Let us pass now to the pathological lesions after death. As I never had any opportunity to make a post mortem examination of the disease myself, I cannot give any opinion as to the nature of these lesions, but I refer to the results published in the REVIEW by two competent veterinary surgeons. Prof. Stalker made the after-death examination of five subjects with the most perfect uniformity as to the lesions presented. In every instance there was a marked infusion into the fourth ventricle of the cerebrum; liver and spleen were abnormally dense, the walls of the intestines almost destitute of blood and the stomach enormously distended with undigested food; the stomach with its contents weighed as much as seventy-five pounds.

In the July number, 1888, of the REVIEW, Dr. Schwartzkopf, Veterinarian in the United States Army in Western Texas, states that he found the large sinuses of the cerebrum to be filled with straw-colored fluid; the vessels of the pia-mater injected; the gray brain substance reddened and cedematous, and the cut surface glistening and moist. On the basis of the brain, inside the arachnoidæ, about one teaspoonful of pinkish fluid; the medulla oblongata and parts of the spinal cord taken from cervical and lumbar regions cedematous in appearance and moist in cut surface; thoracic cavity normal; heart endocarditic in a slight degree, stomach partially filled with ingesta; abdominal organs all normal.

*Physiological Remarks Concerning the Nature of the Disease.*

—According to these lesions, which I consider to be very clear

and distinct, we can with all certainty locate the disease in the nervous centres, the cerebrum and the spinal marrow. All disorders in the digestive organs, in the circulation and in the general nutrition are consecutive and entirely depending from the pathological alterations in the nervous system. The cedematous exudation in the spinal marrow and the cerebral substance would explain the difficulties in the movements of the body, in progressing, turning, backing, in the uncertainty of the gait and the painful sensation over and near the atloid-occipital articulations, etc., as if the least movement of any part of the vertebral column would seem to cause a painful pressure upon the spinal marrow and its membranes. The coagulum in the fourth ventricle is probably causing a pressure upon the superior half of the medulla oblongata and might be the cause of the irritation of the roots of all the nerves emanating from that point, such as the seventh, eighth, ninth, tenth, eleventh and twelfth pairs, and above all the fifth pair, which furnish the vital nerves to all the principal organs that enable the animal to correspond with the outside objects, and to maintain life and general health in an efficient condition. Thus we can easily account for the perversion of sight as to distance, size and nature of objects, the weakness of facial muscles, the loss of taste and hearing, the diminished action of heart and lungs and the directly following decline of general nutrition or general weakness.

But effusion of blood in the ventricles and subarachnoid cavity can be found in other diseases of horses as well as in rattleweed, such as sleepy staggers or immobility and encephalitis. Truly they will produce different effects according to their degree, and can be expressed by convulsions and various degrees of violence and frenzy, stupor, coma or paralysis. But as yet no disease of the brains or their envelopes have developed the various symptoms of irritability, in so many different degrees, as the loco-af-fection. If the coagulum in the ventricles and the cedematous exudation in the substances of the cerebrum and the spinal marrow are not the direct cause of this disease, they might be the effect of an irritating element that produces congestion in the same organ. What is then this irritating element? What is its nature? Is it a narcotic like opium?

Prof. Sayre has proven by repeated analysis the complete absence of any kind of alcaloid in the loco-plant, and gives us no indication as to the true essence of the irritating element. There must be an unknown agent that causes some irritation of the nervous system when taken in small quantity, and if it enters the body in larger doses or for a long time, it will cause at the end congestion or mere stagnation, and consequently the various pathological lesions as have been found after death. The true nature of this irritating agent remains unknown until more complete analyses have been made of the plant, and until the disease has been more thoroughly studied in its different stages, before and after death, by learned professionals who can dispose of more time and more money than any regular practitioner can afford to spend on such patients.

*Treatment.*—It is difficult, if not impossible to prescribe a positive treatment for this disease. For animals affected in large pastures, the only good advice to give, is to remove the stock to another pasture, clean off the plant and plow up carefully all such land where the rattleweed plant grows. Even the working horses on a ranch are very difficult to treat, as it is generally impossible, if not dangerous, to approach and handle them. Such horses as are only lightly affected or only over-excited, might be kept moving or working, must be fed on clean hay, or green feed, and might receive a dose of bromide of potassium in the feed every evening. Belladonna might answer as well. If it be possible to administer a good dose of alces, and at the same time take out three or four quarts of blood, it might have a good effect. It is practically not advisable to apply a blister behind the ears. In the course of five or six months a good many animals, thus cared for, especially when in a good green pasture, become more quiet and again able to work.

When coma is present, the case is hopeless; general weakness and emaciation will progress and cause death, especially if the horse is left to himself in the pasture.

Before closing this notice, I wish to call attention to the precautionary advice given by the German, French, and Belgian authors in the use of Leguminosæ in general, which advice is very

proper in Europe, where a good deal of artificial hay is made every year for cattle and horses. All leguminous plants contain a great proportion of nitrogenous substance that is very rich and nourishing, and disposes the system to the formation of adipose tissue. But they are also said to contain a specific poison, that causes immobility, a subacute inflammation of the brain, or other nervous affections, like restlessness, paralysis, roaring, sleepiness and even congestions. Ordinarily will often occasion nervous disorders, when given in large quantities. Of these dangerous leguminosæ, two species are particularly mentioned: they are hop-clover—*Medicus lupinus* and *Lathyrus Cicera*—chick vetch. Very similar symptoms may be caused by English Ray-grass. Dr. Winkler advises to use carbonic acid, bicarbonate of soda and tartaric acid.

It might be possible that this irritating element in the rattleweed plant has some similarity to the specific poison in all the leguminous plants.

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### MALADIE DU COIT.

By W. L. WILLIAMS, V.S.

Report on the outbreak in Illinois to the State Board of Live Stock Commissioners.

(Continued from page 349.)

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#### PATHOLOGICAL ANATOMY.

In animals which have succumbed to, or been destroyed in the last stages of the malady, there is seen quite uniformly an evident degree of anæmia and emaciation. Distributed throughout nearly every tissue in the body there is found a characteristic yellowish deposit of gummatous materials, bearing a close resemblance to the gummata of human syphilis, especially abundant in the subcutaneous and intermuscular connective tissue, and nearly every organ of the body partakes of the general yellowish tinge.

*The muscles*, especially those of the thigh and croup, are pale and soft, sometimes showing marks of fatty degeneration.

*The bone tissue* is fragile, and both cancellated tissue and medulla show large brown patches.



In each autopsy made the coxo-femoral articulations (hip joints) were found much altered, their ligaments enlarged, softened and congested. Other observers state that in some cases these ligaments become so fragile from disease that they are sometimes ruptured.

*The synovial capsules* of the hip joint were found filled with reddish-colored synovia, and the membrane injected and dark colored, and in several cases in the acetabulum was found a well-marked dark purple spot, surrounding the attachment of the round ligament of the hip joint (ligamentum teres.)

*The bowels* were found pale, and in some cases showing signs of previous inflammation on their peritoneal surface. The mesentery presented a pale saffron color and increased thickness, due to a gummatous deposit.

The mesenteric lymphatics were uniformly enlarged, pale yellow and friable.

*The spleen* was pale, small, shrivelled, tough and hard.

*The liver* was soft and filled with dark blood.

*The kidneys* were found somewhat enlarged, very pale, and containing considerable watery fluid.

*The genital organs* fail to exhibit the extraordinary changes one would naturally expect to find. In a well marked case in a mare, affected one year, where the vaginal discharge persisted to time of slaughter, the autopsy revealed the uterus and vagina containing a considerable amount of a dirty grayish-yellow purulent matter, the uterus enlarged to thrice its natural size, and its lining membrane and that of the vagina, pale yellowish white, thickened and wrinkled. The left ovary contained a cyst, filled with one ounce of yellowish serum.

*Stallions.* Autopsies on several stallions, all diseased from one and one-half to over two years, exhibited the general changes as previously indicated, while in some cases the genitals showed marked changes, and in others there were very slight deviations only from the natural state. One very bad case, Black Brilliant (XIII), had scrotum enlarged to about ten times its natural size, hard and unyielding to the touch. The skin of the scrotum was enormously thickened and of a pale yellow color. The in-



ginal gland of the right side was the seat of an extensive abscess, opening at the upper part of the scrotum. A large abscess, occupying the usual position of the testicle, filled with dark yellow, hard cheesy pus, pushed the testicle from its place up into the inguinal ring. The testicle was small, atrophied, soft, flabby and pale yellow, with the membranes firmly adherent at every part.

*Penis* offered no external evidence of disease.

*Urethra* contained a small amount of a dirty puriform matter, the living membrane appearing roughish, grayish-yellow in color, without any appearance of ulcers.

The seminal vesicles and enlarged portions of vasa deferentia contained a considerable amount of thin, grayish, puriform matter.

*The left testicle* was about natural in size, with coverings firmly adherent to every part. No appearance of ulcers was found in the urethra of either of several stallions examined, but all seemed to offer, in a greater or less degree, a collection of unnatural puriform material in the vesiculæ seminæ and vasa deferentia, from which, so far as could be seen, the infecting material had been derived.

The testicles were uniformly pale yellow, soft and flabby, and almost invariably smaller than natural.

In some cases the coverings of the testicle (*tunica vaginalis propia* and *tunica albuginea*) were thickened, adding to the gross size of the testicle and giving it a somewhat firmer feel than where this thickening was absent. The two peritoneal coverings were more or less completely adherent to each other. The condition of the sheath and scrotum varied widely from the normal size to the great enlargement in the cases noted above.

Other observers have noticed inconstant changes in the nervous system, principally of injection of the coverings of the brain and spinal cord, softening of the lower part of the cord and occasional extravasation of fluid into the ventricles of the brain.

The nasal mucous membrane usually shows catarrhal inflammation, with collections of pus or mucus in the nasal cavities.

Metastatic abscesses may occur in the testicles, spermatic cord, lungs, and other organs.

*Diagnosis.* Of all contagious diseases, none probably are so

insidious and difficult of positive diagnosis as equine syphilis in imperfectly developed, isolated cases, without a clear history, and since we now have the disease in our midst, a reliable means of diagnosis is certainly a desideratum.

To this end, we should first decide whether or not there is a benign and a malignant form of this disease.

All English writers mention two forms, relying for their descriptions upon translations from the French and German.

Judging from these translations it would appear that those authorities differ among themselves as to the existence of two forms of the disease, English writers, rather ineffectually, attempting to harmonize certain radical differences in symptoms by bringing to their aid climatic influences or different sources of origin.

Evidently in some of these translations two distinct disorders are confounded, and Rodloff is undoubtedly correct in the main, when he asserts that the so-called benignant form of equine syphilis is a wholly distinct benign affection.

In attempting to follow the writings in a foreign tongue, that very able and careful author, Dr. Fleming, is led into some remarkable contradictions and perplexities. In describing his benignant form, which he asserts corresponds to the first stages of the malignant, he makes particular mention of abundant pustular eruptions on the external genital organs, and later, in describing the malignant form, admits that in many of the most serious outbreaks these eruptions were absent, and yet these cases must pass through the primary stages like the benign.

We understand that a benign disease is one of a mild character not dangerous to life, while a malignant disease is one which jeopardizes the life of the afflicted being.

Now Fleming, discussing the nature of the disease, says: "And we must be content with the statement that it is an eminently virulent malady." Again, under the head of course and termination, he says: "As a rule the progress of the disease is slow and its termination most frequently fatal."

Again, still under the head of "Mortality and Loss," after quoting serious losses in several outbreaks, he says, "but it may

be sufficient to state that the loss is variable, though always very serious, and is seldom less than fifty per cent., rising even to seventy," a remarkably severe loss for a disease frequently benign.

In no outbreaks is there a loss of less than forty to fifty per cent. mentioned, whereas if there be a benignant and a malignant form, the one passing into the other by imperceptible gradation, we should expect a like gradation of losses, instead of nothing in the benign and fifty to seventy per cent. in the malignant.

Quoting a Bohemian writer, Fleming makes the incubative stage from eight to sixty days; while citing Haubner, writing of the benign form, he makes the time three to six days, thus apparently sanctioning the idea that a benign attack of a disease develops far more quickly after infection than a malignant one, although this benignant form is essentially the same as the first stage of the malignant.

Again, under the head of *Exanthema of the Genital Organs*, Fleming describes a distinct exanthematous disease, without making any marked distinction between it and his benignant type of *maladie du coit*, and mentions, as synonyms, names taken from his "Synonyms of *Maladie du Coit*."

Professors Williams and Law follow briefly the description of Fleming, emphasizing the pustular eruptions on the external genitals, as described by Fleming in his *exanthematous* affection, and in his benign *maladie du coit*, and both are silent regarding the wholly distinct benign exanthematous disease, which is far more widespread and common than *maladie du coit*, is characterized by abundant pustular or vesicular eruptions upon the external genitals, which appear in successive crops, heal rapidly, and disappear spontaneously, or readily yield to simple local treatment in three to ten weeks, and rarely, if ever, ending fatally.

This disease has been fully described in my report of an outbreak at Kempton, Ill., which I investigated by your orders in October last, and which is undoubtedly the disease which most authors confound with the malignant disease under consideration.

While investigating the outbreak in De Witt County, I had occasion to see a young roadster stallion, property of B. F. Nick-

erson, of Heyworth, Ill., which was affected with abundant vesicular eruptions on the genitals, appearing in successive crops, healing rapidly, and leaving a temporary white cicatrix at the seat of the eruptions.

This horse being at the immediate border of the infected area, and relying upon the description of English writers, it was very naturally supposed that this horse had been exposed to and contracted the disease, but careful investigation showed that he had not been exposed, that all mares served by him remained sound, and in a few weeks time the horse had completely recovered, and was unquestionably affected with the same benign venereal disease as that observed at Kempton.

There has been nothing about the present outbreak to suggest benignancy, as over fifty per cent. have already succumbed; a number were so worthless that they were bought at your orders, for a nominal price, and killed. And the few that remain have not passed through the malady without jeopardy to their lives, and in many cases, their peril is not yet passed. Taking all facts into consideration, therefore, it seems quite reasonable to disagree with most writers and agree with Rodloff, that the so-called benign and malignant types of *maladie du coit* are really two wholly distinct affections, and admitting the existence of a malignant form only, which we choose to denominate equine syphilis, and a wholly distinct benign venereal disease, we are better prepared to arrive at a safe diagnosis.

*The pathognomic signs* in the mare consist then in the appearance, in eight to many days after coitus with an affected stallion, of well marked uterine and vaginal irritation, with redness of the vaginal mucous membrane, and mucous becoming a mucopurulent discharge from the vagina, swelling of the lips of the vulva, enlargement, loss of pigment and unnatural dryness of the clitoris, and loss of pigment along the margin of the vulva, and on the thin skin of the vulva, anus, perinæum, under side of tail, etc.

*This depigmentation* is peculiar and characteristic, presenting a marked distinction between the two venereal diseases.

In equine syphilis these white spots are *not* the result of pre-existent ulcers or erosions, but the depigmentation takes place



without any other changes in the skin, observable to the naked eye; while in the exanthematous disease the discolored spots are the results of previous eruptions, and are no larger than the parent ulcer ( $\frac{1}{8}$  to  $\frac{1}{4}$  inch in diameter) and regular, circular in outline, the pigment being most completely destroyed at the center and being replaced by pigment first at the periphery; while in equine syphilis these white patches are indefinite in extent and contour. They may be one-quarter to one, or even four or five inches in diameter, or the different patches may extend and coalesce, until the whole perinæal region is devoid of pigment, and when the pigment is replaced it is deposited hap-hazard over the entire discolored skin. The discolored spots in the benign exanthem are very transient, disappearing in ten to fifteen days, while those of equine syphilis persist for six to eighteen months and even longer, disappearing first at parts farthest from the vulva, then the margins of the vulva lips, and lastly the clitoris.

The open vulva and enlarged, protruding, unnaturally dry clitoris, especially in young and otherwise healthy mares, is quite pathognomonic. The welt-like, lenticular swellings in the skin of various parts of the body, the rapidly progressing emaciation without loss of appetite, the erratic and peculiar lameness and paralytic symptoms already described should, when present, suffice with the above to enable us to form a safe diagnosis.

*In the stallion* the history of the case, whether exposed or not, or whether infecting mares or not, is all-important, otherwise the diagnosis is generally difficult and sometimes impossible. The constitutional symptoms, when present, are as characteristic in the stallion as in the mare, but the former may be long affected before developing these.

There is usually, however, some abnormality of the external genitals, either of the prepuce, sheath, testes, penis or scrotum.

The prepuce, when affected in the earlier stages, presents a peculiar œdematous looking swelling of variable degree, but it is unlike ordinary œdema, the infiltration being more fixed and elastic than in true œdema and not pitting distinctly on pressure; neither is it hard and indurated, but is yielding, painless and elastic.

The penis when affected offers specially its pendant character;



it hangs too far out of the sheath, generally in the prepuce, but in extreme cases hangs entirely out of prepuce and sheath, full length and powerless, so that when the animal is trotted the penis is thrown from flank to flank by the swinging of the body.

When the testes are affected they may be atrophied, and high up against the inguinal ring, or apparently enlarged and pendant, are usually soft to the touch, and indefinite in contour from adhesion of the coverings.

*The prognosis* is always unfavorable, and there is no safe guide by which we can predict the final result.

*The mortality* ranges usually between sixty and eighty per cent. of the affected animals. In the present outbreak, as shown by footings of the stallion list, almost seventy per cent. have died or been killed, at a nominal price, as practically worthless; and when we consider the imperfect recoveries in those remaining, the exceedingly protracted course of the disease, the expense of keeping while affected, and expense and trouble of treatment, the direct monetary loss to the owners has considerably exceeded the original value of the entire number of affected animals.

*Contagium* is "fixed," that is, transmissible only by direct inoculation, and is thought by many authors to exist mainly or only in the secretions of the urethra in the horse, and the vagina and uterus in the mare.

Autopsies in several stallions in the present outbreak revealed no ulcerations or disease of urethra, but there was every reason to believe that the seminal vesicles and the enlarged portion of the vas deferens were the real sources of principal supply of the infecting virus in the stallion. Experiments by European veterinarians, as well as observations in the present outbreak, demonstrate fully that the disease is contagious, but it seems impossible to transmit the disease to others than solipeds (horse, ass and mule).

*The vitality* of the virus is unknown; in affected animals it certainly persists for several years.

It is transmitted practically only by direct contact of a diseased with a healthy animal in the act of coition, although it is possible to transmit the disease by inoculation.

*Cohabitation* without sexual intercourse will not produce the disease.

*Its extension* is affected by diseased stallions and mares, the insidious character of the malady in both being specially favorable to the transmission of the disease to remote localities, where it may gain a serious hold and wide dissemination before its dangerous character is ascertained.

(*To be continued.*)

## THE VETERINARY SURGEON IN THE U. S. ARMY.

BY FEARNAUGHT.

As very few, if any, of the members of the veterinary profession outside the service itself have any clear ideas on the status of the veterinarian in the United States Army, and as I have seen the subject only touched on once or twice, I make this effort to place the matter in its true light before the readers of the *VETERINARY REVIEW* (confining myself strictly to facts) with a hope that it may be the means of deterring some young graduate from committing professional suicide, and at the same time increase the probabilities for the reform so much needed by the army veterinarian.

The veterinary surgeon who desires to enter the army of the United States in his professional capacity makes application by letter to the Honorable Secretary of War, at Washington, D. C., and if a vacancy exist, and it generally does exist, in any of the ten regiments of cavalry constituting the mounted branch of the service, the applicant, providing he be a graduate of any college, is appointed instantler. There are fourteen veterinary surgeons in the United States Army, and these are distributed among the ten regiments already mentioned, the Seventh, Eighth, Ninth and Tenth (the regiments are designated numerically) receiving two, while the others receive but one; this inconsistency on the part of Congress is one of the mysteries of the service. Should the applicant be appointed to any of the commands from First to Sixth, inclusive, he receives one hundred dollars per month and quarters—quarters mean house room, light and fuel—as compensation, but should he be appointed to any of the others, he

receives but seventy-five dollars per month, it being understood that he enters as junior surgeon, the senior receiving one hundred dollars; the duties consist of visiting the stables, generally once a day, and treating any animal that may be brought to his notice as requiring his services, but this latter seldom happens for reasons that will soon be apparent. What rank does the veterinary surgeon in the United States army occupy? This is a very natural question. He occupies no rank virtually; the army regulations, the book by which all army people swear, says he shall hold the rank, and receive the pay and allowances of a Sergeant Major, but the veterinary surgeon being a civil employee cannot hold any rank, therefore it is only nominal. The next question in order is, what is a Sergeant Major? A Sergeant Majorship is the highest rank that any enlisted man can hold in the army of the United States, and this rank is only three removes from a private soldier. The Sergeant Major is selected and appointed by the commanding officer of the regiment, and he can be relieved and reduced at his will. It requires no especial training to fill the rank of Sergeant Major; all that is necessary is to read and write fairly well; he is simply a *soldier*, and this term has a very significant meaning when uttered by an officer, for remember an officer is not a soldier, he is an *officer*. The chasm between an officer and a *soldier* is a very wide and deep one indeed, and cannot be bridged under any circumstances, except by a commission signed by the President of the United States; and yet the army veterinarian is placed on the soldiers' side of the chasm, or suspended midway in a miraculous manner, like Mohammed's coffin. In this connection the unfortunate veterinary surgeon always reminds me of Darwin's "missing link." The wonder is that his caudal appendage has not blossomed forth ere this. Socially the army veterinary surgeon is not tolerated by the officers; they no more think of inviting the veterinary surgeon to dinner or any other social entertainment than they would of inviting the Sergeant Major or Mr. Crowley, (ere his death) in Central Park Zoological Gardens; he is referred to as the "horse doctor," probably by some little Second Lieutenant, who, having been dismissed from West Point because his cranium was too thick or his

brain too small to retain any of the knowledge there imparted, crept into the army as an *officer*, either through some political influence brought to bear upon the White House, who appoints him from civil life, or he enlists in the army as a private, if his father is an officer, serves a certain period, and, after passing a bogus examination before a board of officers composed of friends of the family, lo, and behold, blooms forth as an officer—and looks down with lofty contempt on the miserable “horse doctor,” who has spent from three to four years of his life, and from two to four thousand dollars in cash to acquire a scientific training that will place him in a position where he can earn from seventy-five to one hundred dollars per month, and herd with the common soldier who takes a pride in ridiculing his professional opinions, even to his very face. All men, even veterinary surgeons, must have associates; it is human nature; and stationed at a military post, the veterinarian being tabooed from the society of the officers, seeks the Commissary Sergeant, who issues the rations to the trooper, and whose ideas and aspirations can never soar above beans and hard bread, or the Quartermaster Sergeant, who keeps tally of the pick-axes and shovels, and whose aim in life is to get ahead one pick-axe, and cheat the government mule out of his just due in the shape of forage. In this position, and with these associates, is it any wonder that the veterinary surgeon in the army is saluted by every drunken soldier he may meet, with the familiar abbreviation of “Hello, Doc,” whereas the same soldier would no more think of saluting the M.D. in this manner than he would of committing suicide, and allow me to remark right here that the veterinary surgeon is not recognized either professionally or socially by the Post Surgeon; in fact he is not noticed at all. You may remark he can at least engage himself at his professional duties. Professional duties indeed! he has none; the troop farrier—over whom the veterinary surgeon has no more control than the president of the Lime Kiln Club has over the Interior Department—attends to that; if an animal becomes ill in the troop he is dosed by the farrier with—well, anything will do that comes handy, and if the animal recovers, well and good. If he is about to die the veterinary surgeon is sent for, and is then



expected to perform a miracle; then comes the troop blacksmith—but let him pass, he is a monument erected to the ignorance of the War Department on all matters pertaining to veterinary science and especially to the treatment of the horse's foot in health; he is the butchering mutilator, who, armed with a knife and rasp, revels in the devastation he causes among that most important part of the equine's anatomy—his feet, and this individual lords it over the veterinarian in the army, for were he to interfere with the traditions of the troop shoeing-shop, or offer any suggestions without first requesting permission from the troop commander, he would be ordered out of said shop forthwith. The troops commander relies solely on the farrier and horse shoer, and treats the daily visits of the veterinary surgeon as a piece of impertinence. The drugs used in veterinary medicine in the United States army, thirty-one in number, are placed in the hands of the farriers, who keep them under lock and key, except the alcohol and ether, which he dispenses to his friends, and should the veterinary surgeon be called to treat an animal in a very urgent case, he has to hunt up the individual farrier to whose troop the animal belongs, in order that he may gain access to the drug that he requires. As you may observe, there is not much choice in the matter of drugs—turpentine, laudanum and aloes being considered all-sufficient by our friend the War Department.

The surgical instruments are in the custody of the quartermaster's sergeant, already referred to, who loans them out to the veterinary surgeons, who must return them the following day or an explanation is in order; these instruments are generally in a filthy condition and half rusted, and no sane man would for a moment entertain the idea of performing the simplest operation with them. The only alternative left is to use your own case if you can afford to purchase one out of your small salary. The Government furnishes nothing in the shape of a hospital in which to treat animals. Anyhow it would be a useless appendage, as the veterinary surgeon has not the power to place an animal on the sick list without the sanction of the troop commander, who may be some old fossil who knows no more about a horse than he does about manœuvering his company—and heaven knows, in the ma-



jority of cases, that is very little. When horses are about to be condemned for being unfit for service, a person would naturally suppose that in such a case surely the veterinary surgeon would be consulted. Not at all; he is never thought of. The first he knows of it is communicated by the farrier, or overhearing the conversation among the troopers. In the same manner when animals are purchased for remounts, the veterinary surgeon is totally ignored, and, as a consequence, the class of horses furnished our cavalry are a disgrace. The majority of them possess not a single point of a saddle-animal and are more fitted for the plow or garbage cart. For this reason, when on a comparatively short march, more than thirty per cent. of the horses in a command are suffering from sore back.

I will recite here a few of the indignities heaped upon the veterinary surgeon, who seems to be a shining mark for all who wish to shoot. One I have in mind was compelled to wear a soldier's uniform by the commanding officer and turn out on inspections with a sabre hanging from a belt, although he is a citizen. Recently, while on the march, the veterinary surgeon had his tent taken from him for the use of the two sons of an officer, because, forsooth, the officer found it too hot for three in his; the veterinary surgeon was not consulted at all, and the first he knew of it was on finding his tent had vanished. He made a respectful remonstrance to the officer in command, but was told to "shut up." He was forced to seek shelter with a hospital nurse while one of the officer's cooks occupied a tent that was never intended for him.

During a trip to the borders of Canada some years ago, on a surveying expedition, the cavalry command to which a certain veterinary surgeon was attached happened to meet with a mounted English command, accompanied by a veterinary surgeon, who, in a fraternal spirit, endeavored to call on his brother of the United States, but he, knowing, alas, too well, the relative positions of each, crept under his tent, sneaked around to the picket line, where he borrowed a horse and disappeared up a gulch, where he remained until the English command had taken their departure.

The veterinary surgeon is the footman, or "doughboy," as

the troopers call an infantryman, of each cavalry regiment. He is not allowed a mount nor forage for one, and has to depend on the good nature of a troop commander for transportation, or else ride with a mule driver on the jockey-box of an army wagon. In this, again, he stands forth, the missing link between the cavalry and infantry arms of the service.

In was only a few months ago that the writer had the humiliation of standing by while an officer asked the veterinary surgeon (a very competent gentlemen) if he was properly treating a certain animal on the sick report, or if he understood his business.

The veterinary surgeon in the United States army is an hermaphrodite. He is neither a soldier nor a citizen. He is compelled to wear the uniform of a soldier if the commanding officer so wills it, or, if the officer in command cares not, he may dress in a gunny-sack suit if he chooses. \* \* \* And, in the face of all this, there is a college I know of, situated not a thousand miles from the city of New York, who claims to have the exclusive privilege—save the mark!—of furnishing their graduates with positions! In the United States army, the graduate who has the misfortune to secure such a position has the sincere sympathy of the writer.

It will be remarked: Cannot this state of affairs be easily remedied? It certainly cannot so long as the members of the profession remain dormant and permit graduates to debase themselves by entering this service, where there is no veterinary organization whatever, no incentive to study, no practice (the farrier takes care of that), nothing to look forward to in the shape of promotion; the only object being to kill time and wait for tomorrow. Can the veterinary surgeon in the army be blamed for being dissatisfied? Can he be blamed for anathematizing the army each day of his existence? Can he be blamed for marking the day he entered the United States army with the significant emblem of a skull and crossed bones? It is the opinion of the writer he can not. But, you will say, can't he leave? He certainly can and does, which is why there is always a vacancy for some unsophisticated youngster. There are only two old men

that I am aware of in the service, honorable gentlemen, who, though non-graduates, still fill the positions with credit, but then, they joined the army in the long ago as soldiers, and from stable guards to farriers have secured the appointment of veterinary surgeons. They understand the army, have been raised in it, and take all the indignities and insults as a matter of course. As I remarked before, the veterinary surgeon in the army cannot be blamed for bewailing his hard lot, but he can be blamed for his lack of energy in not letting his position be known to the public; he can be censured for not raising a single hand to help himself or his brother; he can be blamed for lying as a clog on the wheels of the veterinary profession in the United States, for permitting insults and sneers to be cast on one of the noblest professions in the land, that of ministering to the diseases of our animal friends.

To the shame of the veterinary profession—and particularly to the American members thereof—be it said, that not a single effort has been made to raise the profession above its present level in the United States army, if I may except that by Dr. Olaf Schwartzkopff, whose little pamphlet in reference to this subject does him great credit, and which should be closely studied by every veterinarian in this country. This pamphlet can be had by addressing him at Fort Meade, Dakota. Dr. Schwartzkopff is a German, only a short time in the United States, but he thoroughly understands the subject on which he writes, and it is by such agitation as his, seconded by the hearty co-operation of the veterinary profession throughout the United States, that anything can ever be accomplished for the army veterinarian. Young man, keep away from the United States army; shun it as you would the deadly upas or the fumes of carbon monoxide. There is a wide field for you outside its unhallowed precincts, where you can win fame and wealth without the indignities and insults, not to mention the \$75 per month, that are yours in the army of the United States.

## SNAKE BITE AND ITS ANTIDOTE.—V.

EXPERIMENTS WITH CROTALUS VENOM AND REPUTED ANTIDOTES, WITH NOTES ON THE SALIVA OF HELODERMA  
("GILA MONSTER.")

By H. C. YARROW, M.D., Curator Dept. Reptiles, U. S. National Museum.

*(From Forest and Stream.)**(Continued from page 366.)*

A great number of different plans of treatment have been suggested to the writer, and many substances have been sent to the National Museum to be experimented with, but in view of the fact that most of the latter were substances of which the proposer would not reveal the identity, no attention was paid to such except in one instance, that of a "mad stone," or "snake stone," so-called, the composition of which is reported upon by George P. Merrill, Curator of Lithology and Physical Geology, United States National Museum. This was sent by Donald MacRae, from Wilmington, N. C., and is "an indurated and impure kaolin apparently. Its virtue as a mad stone, doubtless, is due wholly to its high absorptive power, which would cause it to adhere to the wound for a time, or until saturated." This is presumably the substance which in the United States has so great a reputation among the common people, when used in cases of snake bite or mad dog bite; but it is quite a different thing from what is known as the snake stone in India, which is generally found to be, on examination, nothing but a piece of calcined deer horn.

A very interesting account of it is given by Dr. Alfred Eteson, Surgeon-Major, Sappers and Miners, Roorkee, in the *Indian Medical Gazette*, Calcutta, 1876, X., 309. He speaks of having received such a stone from a Catholic priest in British Burmah, which was simply a flat piece of calcined horn, three-quarters of an inch square and one and a half lines thick, and resembled a flint, except that all the edges were square and it was very smooth, with an even grade of close cancellations clearly visible. This stone was one of a number made by another priest for the use of the mission fathers. Dr. Eteson had occasion to use this stone a short time after in a case of snake bite, and states as fol-

lows: " \* \* \* I pressed down the stone over the punctures; it adhered at once. I removed my fingers, then sloped his hand and turned it round; lastly I drew on the stone with moderate force until it lifted the skin, as a sucker would do. In about a quarter of an hour the patient himself first mentioned that the stone was loosed. I touched it with one finger and it became displaced." The man recovered.

Dr. Eteson states with regard to his case: "It is not worth much, for the identity of the snake and the precise conditions of the bite were not established, but at all events the stone did what it was professed it would do, and there was no suspicion of the man having been otherwise than genuinely bitten. When this particular stone was shown to the Indian snake charmers they appeared greatly surprised at its form, their own being small, rounded and pebble-shaped, but they recognized it as genuine." Dr. Eteson, being determined to investigate the matter still further, corresponded with the priest at Bassein who manufactured the snake stones, and received the following directions for making them: "Cut or saw in the shape of a gun flint the hard part of a good deer's horn. Polish these pieces by rubbing them on a stone. Soak them for eight hours in good vinegar. Take a small earthen pot (chatty) and place the bits of horn in the center, surrounded by rice hulls in such a way that the stones shall not touch each other. Fill the pot with rice hulls and seal its cover hermetically with earth. Put the pot in the center of a little fire made with rice hulls and let it remain for twelve hours. After the cooking, place the stones again in the vinegar for seven hours. Take out the stones and test them on the lips; if they stick like a cupping glass they are good. To preserve them they should be wrapped in cotton and kept from the air. After one has been used it should be soaked in milk, which will remove the venom." The priest stated that out of sixty stones thus prepared only six were found to be of service.

Sir Joseph Tennant, in his work on Ceylon, fifth edition, 1860, I., p. 197, speaks of the Pamboo Kaloo, a snake stone, which he saw applied by Indian snake charmers in two cases with apparent good effect. Those he saw were of the size of a small



almond, intensely black and highly polished, though of an extremely light substance. Dr. Davy, on the authority of Sir Alexander Johnson, says the manufacture of these stones is a lucrative business, and is carried on by the monks of Manilla, who supply the Indian merchants with them, and his analysis confirms that of Mr. Faraday, who declared the stone to be calcined horn.

In Mexico a similar stone was used, which was prepared as follows: Take a piece of hartshorn of any convenient size and shape; cover it well round with grass or hay and inclosing both in a thin piece of sheet copper, well wrapped round them, place the whole parcel in a charcoal fire until the bone is sufficiently charred. When cold remove the calcined horn from its envelope, when it will be ready for immediate use. In this state it will resemble a solid black fibrous substance of the same shape and size as before it was subjected to this treatment. 1. "Use—The wound being slightly punctured, apply the bone to the opening, to which it will adhere firmly for the space of ten minutes, and when it falls it should be received into a basin of water. It should then be dried in a cloth and again applied to the wound. But it will not adhere longer than about one minute. In like manner it may be applied a third time, but it will fall almost immediately, and nothing will cause it to adhere any more." It will be noticed that the Mexican method of preparing the stones does not differ materially from the East Indian plan. A number of reliable observers have tested these stones and found them to be of no value. Among them may be mentioned Fontana, Viand-Grand-Maraïs, Sir Joseph Fayrer, Vincent Richards and others; it has also been carefully tested by Dr. John Shortt of Madras, who states that he had some difficulty in getting the stone to adhere; dogs and chickens were bitten, but all died. He sums up "There is no truth in the virtues attributed to the snake stone, for it has neither the power to absorb or otherwise neutralize the snake poison from the wound." (*Lancet*, London, 1867, I., 5, 76.)

In view of these unfavorable reports the results of the writer's experiments with the kaolin snake stone will probably be read with some interest, although they were so few in number as to

prove little besides the fact that the stone actually did adhere and became charged with blood.

The first experiment was tried

*Jan. 4, 1888.*—11:55 A. M.—Injected ten minims of glycerine venom mixed with ten minims of water into right leg of chicken, a ligature having been previously applied above point of puncture. A number of superficial incisions were then made in the vicinity of the wound, and the so-called mad stone applied with firm pressure. It held on for a number of minutes and then fell off, and there was a copious flow of blood following its detachment. The stone appeared saturated with blood and was placed in water and cleansed. The ligature was removed from the limb and the fowl liberated.

*Jan. 5*—12 M.—The chicken is apparently very sick, with quickened respiration, is sluggish, crouches down and is averse to movement. In the vicinity of the injection there is much engorgement of the tissues. There is a copious flow of bloody serum from the wound. From this time up to January 9 the chicken gradually improved, and at this date appears entirely well. It walks around, eats well and the wound is cicatrized. It must be confessed that the result of this experiment was entirely unexpected, as it was supposed that the dose of venom given (10 minims) would produce death in about thirty minutes.

To verify the former test a second was tried.

*Jan. 13.*—12:15 P. M.—Injected ten minims of venom and ten minims of water into left leg of chicken, no ligature being applied. Multiple superficial incisions were made in the vicinity of the puncture and a new piece of the stone was at once applied. It held on firmly for nearly fifteen minutes and absorbed considerable blood, falling off finally by its own weight. The chicken seemed to suffer little or no inconvenience from the operation, and walked about picking up corn.

*Jan. 16.*—Is still doing well and the wound healing rapidly.

*Jan. 20.*—Chicken in perfect health, wound cicatrized entirely.

It should be mentioned that both these experiments were tried upon the same fowl, and it may be that the former inoculation with venom protected it from the second. Another experiment tried upon a fowl failed, the bird dying in about four hours.

In this connection attention is invited to a very interesting paper by Prof. Henry Sewell, of the University of Michigan, published in the *Journal of Physiology*, Cambridge, 1887, VIII., 203, entitled, "Experiments on the Preventive Inoculation of Rattlesnake Venom."

Prof. Sewell assumes in this article that an analogy exists between the venom of serpents and the ptomaines produced under the influence of bacterial organisms. He therefore thought that if "immunity from the fatal effects of snake bite could be secured in an animal by means of repeated inoculations with doses of the poison too small to produce ill effects, we may suspect that the same sort of resistance against germ disease might follow the inoculation of the appropriate ptomaines, provided that it is through the products of their metabolism that bacteria produce their fatal effects." To settle this point his experiments were tried, with the following results: First, that rattlesnake venom, kept for some time in glycerine, underwent a gradual deterioration of power, this view being in opposition to the experience of other observers. Second, that "repeated inoculation of pigeons with sublethal doses of rattlesnake venom produces a continually increasing resistance toward the injurious effects of the poison without apparent influence on the general health of the animals." These results are abundantly proved by the tables which accompany the report.

It may be of interest at this point to give a brief account of the different remedies and plans of treatment that have been suggested from time to time for snake bite. Some years since the attention of scientific men was called to a reputed remedy known as Bibron's antidote, of which Dr. W. A. Hammond, U. S. A., in the *American Journal of Medical Science*, Philadelphia, 1858, n. s., XXXV., 94, 82, states that, according to Prince Paul, of Wurtemberg, Prof. Bibron allowed a rattlesnake to bite him on the lips, cheek, etc., and by taking the antidote suffered no inconvenience whatever. Dr. Hammond reports one case in which a man was bitten by large rattler, four minutes after the bite was given a dose of the Bibron antidote, and unpleasant symptoms disappeared but returned; in forty minutes another dose was given. In five minutes all pain had vanished and he recovered

perfectly. He had animals bitten: a wolf three months old; thirty minutes after the bite, when symptoms had become marked, six drops of antidote were given; wolf became well almost immediately and ate a piece of meat. Same wolf bitten next day in three places, but there was some delay in giving the antidote; wolf died comatose in twenty-seven minutes. Snake made to bite a dog, which died because antidote could not be given. Forty-five minutes after, same snake was made to bite another dog; in three minutes after the injury the antidote was given before symptoms developed; in fifteen minutes another dose, and in two hours he appeared perfectly well. Dr. Coolidge in same paper reported case of girl fifteen years old bitten at Fort Riley; ten minutes after, the doctor placed a ligature above the bite, made free incision and gave the antidote, repeated twenty minutes after, injecting into the finger Brainard's preparation of iodine. Girl got well with extensive suppuration of back of hand.

The formulæ for the preparation of this antidote is as follows:

BIBRON'S ANTIDOTE.

℞ Potass. iod., gr. iv.  
Hydrarg. chl. corros., gr. ii.  
Bromine, f. dr. v.

M. Sig. Ten drops in tablespoonful of wine or brandy, to be repeated if necessary. Put in glass-stoppered bottle.

After Dr. Hammond's experiments so much faith was placed in this preparation that it was furnished to all the military posts in the West and South, and the writer remembers to have seen a bottle of it occupying a prominent position in the serpent room of the Academy of Natural Sciences, Philadelphia, then in charge of Prof. E. D. Cope.

Mr. Xantus de Vesey performed a number of experiments with the Bibron antidote, and states that none of his animals perished of snake bite when the remedy was used. Dr. S. Weir Mitchell experimented upon sixteen dogs, with that singular care for which he is noted, with the following results, which are simply negative. Of eight dogs bitten and treated with the antidote two died, while of eight bitten and not so treated three died. It



is intended to try the effect of the Bibron antidote again if a sufficient supply of venom can be obtained.

In 1853 Dr. David Brainerd, of Chicago, in conjunction with Dr. Green, proposed a plan of treatment for snake bite, known popularly as the iodine treatment, which attracted some attention at the time, the process being as follows: "10grs. iodine and 30grs. iodide of potassium are dissolved in 1oz. of water. The bitten part is cupped, or a ligature is placed on the limb until the tissues are so swollen with serum as to allow of the injection passing readily through the distended areolar space. A small trocar and canula is then pushed laterally into the bitten part, so as to reach the site of the wound, and the injection effected by screwing to the trocar a small syringe charged with iodine, and so filling the part by pressing down the piston of the syringe, while the cupping glass remains over the wound and exhaustion is kept up with its aid."

Dr. Mitchell, commenting upon the procedure, very justly says: "Apart from the antidotal value of this ingenious means, it is clear that the necessary apparatus is rarely at hand, and that cups of various curves to fit the equally various surfaces of the body, as advised by Dr. Brainerd, are not likely to come into general use in localities where the rattlesnake is found." In Brainerd's experiments one-half of the pigeons treated by Green and himself died, and in Mitchell's experiments out of seven pigeons six died, so that he states that he was unable to confirm Brainerd's conclusions, although he admits that the preparation has a retarding action upon the venom. In cases in which the venom and iodine was mixed together before being thrown under the skin all the pigeons died. It is a fact, however, that iodine does prevent the usual local manifestations to a certain degree. Tannic acid was found to act similarly, and Dr. Mitchell thinks it is due to the action of these agents upon the tissues and not upon the venom.

Different preparations of arsenic have been recommended from time to time by various authors, the famous Tanjore pill having attained quite a celebrity in the East Indies. It is composed of arsenious acid, three East India roots, of which two are purga-



tive and one an active acro-narcotic, mixed with pepper and the juice of the wild cotton plant. In each pill is three-quarters of a grain of arsenic and two of the pills are given at a dose, a single one an hour after. We might suppose from the large dose of the mineral that in some cases if the venom did not kill, the pill certainly would. This preparation has been experimented upon by several persons, who report against its use. Per contra. Dr. J. P. Ireland in *Med. Chir. Tr.*, London, 1817, II., 396, treated soldiers bitten at Santa Lucia by the *fer de lance* with arsenic in large doses, as follows:

℞ Liq. potass. arsenat., f. dr. ii.  
Tinct. opii., gtt. x.  
Aquæ menth. pip., oz. iss.

to which was added half an ounce of lime juice; this was repeated every half hour for four successive hours—this would be one grain of arsenic to each dose. In addition a carthartic clyster was given, and the scarified parts rubbed with a liniment containing oil terebinthina, liquor ammonia and oil olivæ. He reports four cases cured, and one at Martinique.

Another modification of the arsenic treatment is recommended by Dr. L. Lanszweert, in the *Pacif. M. & S. J.*, San Francisco, 1871-2, V., 108. Arseniate of strychnia, 30 grains of pure strychnia in 4 ounces of distilled water, containing 75 grains of arsenic acid, and evaporating until crystallization takes place, drying the crystals and reserving the liquid, with the addition of 8 ounces of alcohol, for external application. For internal use 1 grain of this arseniate of strychnia is mixed with 10 grains of sugar and 25 grains of turmeric, and divided into twelve powders. One powder to be given at the time of the bite and every fifteen or twenty minutes after until better. Upon recurrence of symptoms give every hour. Reports cure, but no details of cases.

Alcohol in various forms is probably to-day the agent in which the great portion of the people of the world have the utmost confidence as an antidote, a faith unfortunately not well founded if we may believe the many experiments which have been tried. According to Mitchell it is merely a counter-active agent, a stimulus simply, which may buoy the patient over the prostration

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produced by the venom, but as a direct antidote it fails, and this is proved by the fact that a mixture of alcohol and venom is no less deadly than the venom itself. It has been claimed that persons in an intoxicated condition, or those habitually indulging in alcoholic liquor cannot be poisoned by venomous snakes, but abundant proof to the contrary exists, notably in the case of Adam Lake, reported by Dr. Horner in the *North Amer. Med. and Surg. Jour.*, 1831, XI., 227. This man had been in the habit of taking from half a pint to a pint of alcoholic liquor daily, and was intoxicated when bitten by a rattlesnake. Notwithstanding the services of excellent physicians, a number of reputed antidotes being used, he died in less than twenty-four hours. The proper use of alcohol in snake bite, and conditions under which it should be employed, will be considered under the treatment of snake bite further on.

(To be continued.)

## REPORTS OF CASES.

### A CASE OF DYSTOKIA.

By C. H. PEABODY, D.V.S.

On the evening of September 3d I was called about four and one half miles from the city to see a mare ten years old trying to expel a dead foetus. Pulse, 50; respiration, 20; temperature, 101°.

*History.*—The mare showed symptoms of foaling August 25, when she had quite severe labor pains and rupture of the foetal membranes. From that time until I saw her, had had considerable straining. On examination I found a thigh and croup presentation. It was impossible to reach either hock; the only portion of the extremities I could reach, was the crural region on the near side.

After lubricating the parts as well as possible with lard and my arms and hands with carbolized oil, I proceeded to shove the foetus forward and to flex the leg up, but found I could not. I then decided on embryotomy.

Taking a hook-shaped knife I cut through the skin and membranes of the thigh as deep as possible, tearing the muscles with

my hand and cutting through. I succeeded in reaching the femur. Taking a small stout cord and passing the end under, bringing it back, I made a slip-knot; having an assistant draw on it I guided it so it encircled the femur in its upper third, then having an assistant use strong and steady traction, and by cutting the muscles I soon had it separated at the neck of the femur.

Leaving the head of the bone in the coxo-femoral articulation after the end of the femur was separated, by steady traction it was easy to remove the remainder of the leg, which gave me more room. I could not turn the foetus so as to get to the outside of the other thigh, so I cut down on the femoro-tibial articulation the best I could, and by tearing and cutting I at last succeeded in getting a cord round the femur just above the tuberosities so that the cord would not slip; then the assistant commenced strong and steady traction and I succeeded in disarticulating the leg at the femoro-tibial articulation. Then, by raising the end of the femur above the rim of the pelvis and by hard pulling the femur came away. It was then a comparatively easy matter to attach the cord to the tibia, and by traction I separated the muscles and removed the leg, then getting two stout hooks into the foetus I tried to draw the remainder away, but it would not come. On examination I found the abdomen of the foetus so distended with gas that it was impossible to pull it through the pelvic opening.

I then carried the knife as far forward as possible, plunged it through the abdominal walls of the foetus, cutting them as far back as I could. I then emptied the abdomen of all the foetal organs through the opening, and with the help of two stout men, with a long pull and a strong pull, we succeeded in removing the remainder of the foetus.

*Treatment of the mare.*—I washed the womb well out with a solution of carbolic acid, and placed the mare under opium and whiskey for the night.

Next day, September 4, pulse, 60; respiration, 24; temperature, 104°; gave quinine in two-drachm doses, digitalis, opium and whiskey.

September 5. Pulse, 48; respiration, 16; temperature, 101°; same treatment; some discharge from vagina; mare eats well.

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September 7. Pulse, 40; respiration, 12; temperature, 100°; gave half the dose of quinine and whiskey.

The mare continued to improve, and on the 10th was turned out to pasture. I am of the opinion that the parts at those times will stand a large amount of abuse and no harm arise from it.

#### THE HORSE'S TAIL AS AN ANTISEPTIC ATOMIZER.

By P. PETERS, V.S.

A year ago I was called in to treat a gelding, which had been treated by two veterinarians for a period of two weeks for colic. The ordinary symptoms of looking around to the flanks, pawing, with attempts to urinate, were present and persistent. I soon found what I have been feeling for for the past fifteen years, namely, a urethral calculus (this was the first one in my experience). It was situated about four inches below the anus, and the size of a large English walnut.

I operated at once, standing, by making an incision on the median line, upon the summit of the tumor, having first washed the parts thoroughly with a bichloride of mercury solution (1 to 1,000), likewise my instruments and hands and those of my assistants. After the removal the gelding relieved his over distended bladder according to mare fashion (through the wound).

I made a bucketful of the bichloride solution, (one drachm to the gallon of water, colored it with some compatible coloring material to prevent it being possibly mistaken for pure water and endangering life). I then ordered the attendant to steep the horse's tail twice or three times a day in the bucket; this was cheerfully done, while the horse attended to the frequent dressing of the wound, purifying of the air and surrounding objects himself. The horse returned to his work ten days later and the wound was completely healed on the 14th day, proving a complete success.

#### ONE OF THE CAUSES OF SECONDARY HEMORRHAGE.

By THE SAME.

Some years ago on removing the dressing on the third day from a wound remaining after the excision of a large tumor, I

noticed a strong smell of ammonia, and a great tendency of the wound to bleed; the clots were very thin and soft in texture. I argued that according to Richardson's theory the  $\text{NH}_3$  formed here, as a result of fermentation, acted upon the fibrin as a solvent; I accordingly dressed the wound with dry oakum dusted well with salicylic acid, with very satisfactory results.

#### INTESTINAL INVAGINATIONS.

BY DR. T. J. TURNER, D.V.S.

The case hereafter noted having come under my observation and to me of much interest, I thought perhaps it might also prove of interest to others. It was a case of invagination in a two-months-old colt of the draft breed. About 10 A. M. of September 20th, Mr. Russel called at my office, and says, "I have a colt about one and one-half miles out, I wish you would go and see. He is a little ailing."

Upon questioning him as to time of colt's sickness, he said, "he seemed to be a little dauncy yesterday, for he did not seem to be hungry, and when he ate a little he walked off and lay down. This morning he would not eat, but lays down considerable. Thought he was swollen in the flank a little." I went out in about one-half hour, expecting to find a case of indigestion with probably some tympanitis. When I arrived at Mr. Russel's, I found colt had been dead about twenty minutes. I suggested a post mortem and we took colt off and held it. Upon opening abdominal cavity, found much gas contained in the viscera and stomach. Then thought I had a case of tympanitis. There was not much but gas in them. I never once thought of invagination, and was removing the viscera when I felt a hard substance in one of them. It attracted my attention, and upon examination I found it to be an invaginated bowel. It was a portion of the large intestine, and adhesions had begun to take place. The upper end was almost in a state of decomposition and was much hypertrophied.

The passage was completely closed, even gas would not pass. I unraveled the invaginated portion and found ten feet involved. Colt defecated that morning. How would you be able to diagnose it? I think not at all, and that in this inability we may

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treat for tympany, etc., when, in fact, some cause such as this may be the real disturbance.

### FILARIA CAPILLOSA OR OCULI.

By M. FRANÇOIS.

A case of the above fell under my notice recently with the following history:

About two or three months ago a small white worm was noticed in the anterior chamber of the left eye of a small bay gelding of good breeding, used for livery purposes. The worm was small when first noticed, but has grown steadily until, at present, it is three or four inches long and is in constant motion. The eye at present is bluish white or milky color, so that the anatomical features of the worm as mentioned in Gresswell's Practice of Equine Medicine, page 343, are not readily discerned. The horse seems to suffer no pain, but the vision is greatly impaired.

### BIBLIOGRAPHY.

TRATTATO DI TECNICA E TERAPEUTICA CHIRURGICA GENERALE E SPECIALE DEGLI ANIMALI DOMESTICI DEL DOTT. N. LANZILLOTTI BUONSANTI\*.

We proffer our sincere thanks to the editors of this volume, (the first of the work), for the compliment they have paid us, and for the opportunity they have given us for the examination of this portion of one of the most complete text books ever published on the operative surgery of domestic animals. The statement that the author is Dr. Lanzillotti Buonsanti, Professor and Director of the School of Veterinary Medicine of Milan, is perhaps all that is necessary in the way of an indication of the quality of the work. An indefatigable worker, an able writer, an active practitioner, and a veterinarian of high repute, his opportunities have been so improved as to entitle him to a place among the foremost authorities of Europe, and to constitute in advance a suitable voucher for the merit and value of the present

\* Treatise of general and practical, technical and therapeutical surgery of domestic animals. By Doctor N. Lanzillotti Buonsanti.

work. Considering the number and the character of the authorities upon the subject, already to be found in the writings of existing French, German and English authors, it would seem scarcely possible to increase the sum of the knowledge already available by the veterinarian practitioner, and yet we believe that Dr. B. has both in the amount of material he has furnished, and in the manner of its presentation, surpassed his predecessors.

The six hundred pages of which the book consists, illustrated by over four hundred wood cuts, are divided into two principal parts, the first treating of general technical surgery, and the second of operations in general, having special reference to the art of minor surgery. In the first part some generalities are followed by remarks upon the various means of contention of all animals, either in the standing or the decubital positions, and both with and without anæsthetics, followed by observations on the simple division of tissues; the various means of hemostasy; the means of reunions; the use of antiseptics, with their varieties, and the applications of bandages and dressings. The second part describes the various forms of the cauterization, the different modes of venesection, the application of setons and other counter-irritants; the use of hydrotherapeuty; the massage process and the application of electricity, followed by instructions in the various modes of administration of drugs through the mouth, the respiratory apparatus or the skin. This part is completed by a reference to the history and the use of vaccination in the treatment of such diseases as pleuro-pneumonia, the various forms of anthrax, variola, rabies, etc. A short appendix on the removal of foreign bodies, and on grafting, completes this excellent addition to the veterinary literature of Italy.

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## SOCIETY MEETINGS.

### NEW JERSEY STATE VETERINARY SOCIETY.

The regular meeting of the New Jersey State Veterinary Society was held on Thursday, November 12, 1888, at Taylor's Hotel, Jersey City, N. J.

Dr. Joseph Nayler occupied the chair on account of the President, Dr. J. C. Corlies, not being present, and the meeting was called to order at 3 P.M. The regular order of business was proceeded with, and Dr. Albert H. McIntosh of

Morristown, and Dr. Paul Mill of Jersey City, were elected as members, as both are graduates from regular veterinary colleges.

Dr. Wm. Herbert Lowe of Paterson, read a lengthy paper on "The Hypodermic and Intra-trachical Methods of Exhibiting Remedies in Equine Practice," after which a very lively discussion took place, in which all members present took an active part.

Dr. Joseph Autenrieth promised to read a paper at the next meeting, which is to be held at Paterson, February 7, 1889. His paper will be on an interesting subject to all practicing veterinary medicine and surgery, and a lively debate is expected to take place.

CHARLES KUEHNE, D.V.S., *Secretary.*

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### NOTICE.

Wanted, a copy of "Parasites," also "The Internal Parasites of our Domesticated Animals," by T. S. Cobbold.

M. FRANCIS.

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### CORRESPONDENCE.

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#### PRACTICE TO DISPOSE OF.

Will you please insert a notice in the REVIEW, that any qualified veterinary surgeon seeking a location would do well to address me, as I intend to discontinue practicing here. This is a desirable location, as Burlington has a population of over thirty thousand, with a good farming country surrounding. I am the only qualified veterinarian within a radius of forty miles, and will give satisfactory reasons for wishing to sell.

Yours Respectfully,

E. S. JOHNSTON,

Burlington, Iowa.

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### NEWS AND SUNDRIES.

AN ACT to revise the law in relation to the suppression and prevention of the spread of contagious and infectious diseases among domestic animals, etc.

SECTION 4. Any person who, knowing that any contagious or infectious disease exists among his domestic animals, shall con-

ceal such fact, or knowing of the existence of such disease, shall sell the animal or animals so diseased, or any exposed animal, or knowing the same, shall remove such diseased or infected animals from his premises to the premises of another, or knowing of the existence of such disease, or exposure, shall drive, or lead, or ship the same by any car or steamboat to any other place in or out of this State, and any person or persons who shall bring any such diseased, or knowingly, shall bring any such exposed animal or animals in this State from another State; and any person or persons who shall knowingly buy, receive, sell, convey or engage in the traffic of such diseased or exposed stock, and any person who shall violate any quarantine regulations established under the provisions of this act, shall, for each, either, any, and all acts above mentioned in this section, be guilty of a misdemeanor, and on conviction thereof, or of any one of said acts, shall be fined in any sum not less than \$25 nor more than \$200, and imprisoned in the county jail until the fine and costs are paid, and shall forfeit all right to the compensation for any animal or property destroyed under the provisions of this act.

The Commissioners have issued the following:

WHEREAS, Actinomycosis, or "lumpy-jaw," and tuberculosis, are dangerously infectious diseases:

Therefore, be it known that all persons detected in violating the act of which the above is an extract, by buying, selling, shipping, or in any wise moving such cattle so diseased, will be prosecuted, and quarantine enforced against such animals.

[Signed,]

JOHN M. PEARSON,  
H. McCHESNEY,  
E. S. WILSON,

Live-Stock Commissioners, Illinois.

**CATTLE DISEASE IN CALIFORNIA.**—From information received, cattle in the Golden State are suffering with a number of diseases, which are likely to play sad havoc amongst them. Texas fever, actinomycosis, tuberculosis and anthrax have been recognized by Dr. T. Bowhill in a recent official investigation that he made by the direction of the Bureau of Animal Industry.